

## INWIDA - Results of IQM peer reviews on cerebral infarction mortality

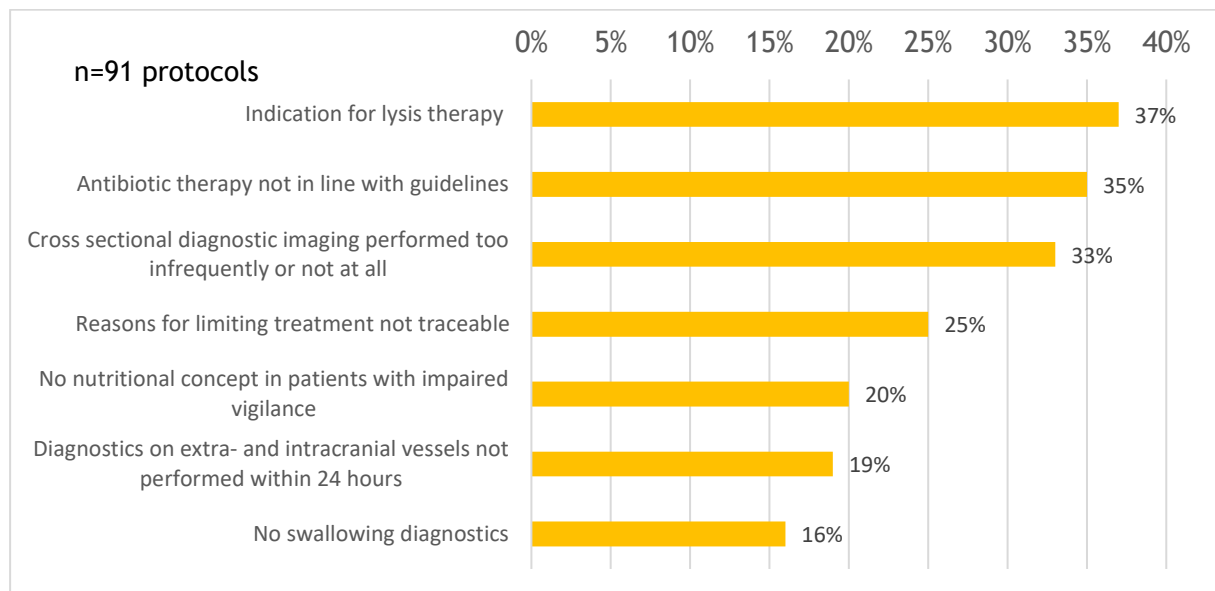
Between 2010 and 2017, 91 IQM peer reviews were conducted on patient mortality from cerebral infarction. In these reviews, 1599 patient records were evaluated according to the IQM analysis criteria.

Below are the results, which are based on the protocols from these IQM peer reviews. A protocol contains the aggregated results from 16 patient records analysed in the respective peer review.

The protocol data is of a qualitative nature. Categories were created from these data and the responses counted. The summary of results is organised around the following questions:

- What are the top 5 to 7 areas for improvement identified during the record analysis?
- What 3 to 5 suggested solutions or measures were derived from the peer review for each area of improvement?

### Areas for improvement most frequently mentioned in the peer reviews on cerebral infarction mortality



The following solutions were proposed for the top areas of improvement:

- **Indication for lysis therapy**
  - Check whether lysis therapy is indicated (and the necessary time window) for each patient, consult neurology immediately
  - Shorten the time it takes to get a coagulation test by setting up a point of care in accident and emergency
  
- **Antibiotic therapy**
  - Develop an SOP for antibiotic therapy
  - Institute a microbiology consult
  
- **Cross sectional diagnostic imaging**
  - Expand and improve advanced diagnostics
  - Use cross sectional diagnostic imaging (CTA, possibly MRT) and Doppler/duplex scans within 24 hours for early detection of occlusion or stenosis
  - Review procedures in accident and emergency
  
- **Reasons for limiting treatment not traceable**
  - Involve a neutral clinical ethics committee
  - Document the presumed patient's wishes
  - Make a note of the health and welfare power of attorney and include a copy in the patient record, if available
  - Train staff in talking to next of kin and the relevant legal background
  
- **Nutrition and swallowing diagnostics**
  - Conduct SLP swallow exams on all stroke patients before the first oral intake of food
  - Develop a nutrition concept for early (enteral) nutrition, provide special food for patients with dysphagia
  - Start enteral nutrition and medication earlier

### Assessment by clinical experts:

*“In my opinion, the collected data first needs to be differentiated by whether the patient visited a clinic with a certified stroke unit or a clinic without a certified stroke unit. Many criteria that respondents identified as needing improvement are already covered by the requirements for stroke unit certification.”*

### Comments on the proposed quality improvement measures:

- **Indication for lysis therapy**

**Check whether lysis therapy is indicated (and the necessary time window) for each patient, consult neurology immediately** - *This recommendation does not apply to certified stroke units, since lysis therapy must be one of their core competences. Of course, systemic thrombolysis can also be performed with telemedical support. At this point in time, it is no longer standard practice for systemic thrombolysis to be performed outside a certified stroke unit.*

**Shorten the time it takes to get a coagulation test by setting up a point of care in accident and emergency** - *This is a very important recommendation. Even certified stroke units should provide POC testing in accident and emergency. This is also a good idea because it enables you to quickly measure the INR level and determine whether thrombolysis is indicated, saving the time that would be lost waiting for an emergency laboratory test.*

- **Antibiotic therapy**

**Develop an SOP for antibiotic therapy** - *This is highly recommended, especially when adapted to the particular capacities of the clinic. In other words, the optimal solution would be a pathogen and resistance analysis in the respective department with a tailored SOP for antibiotic therapy in patients with frequent infections.*

**Institute a microbiology consult** - *Generally a good idea, although the size of the respective clinic should also be taken into account, since not all clinics have a microbiology service on site.*

- **Cross sectional diagnostic imaging**

**Expand and improve advanced diagnostics** - *This recommendation is very broad. 24/7 availability of CCT and CT angiography should be standard in stroke diagnostics; CT perfusion (and possibly emergency MRI diagnostics) may also become standard in the recent amendment to the OPS for complex stroke care. However, this remains to be seen.*

**Use cross sectional diagnostic imaging (CTA, possibly MRT) and Doppler/duplex scans within 24 hours for early detection of occlusion or stenosis** - *The OPS on short-term complex stroke care prescribes mandatory vascular diagnostics while the patient is in the stroke unit, and the German professional association recommends vascular diagnostics within the first 24 hours after admission. However, even this may be too long. The standard should be that emergency CT angiography can be performed at any time to*

*detect intracranial vessel occlusion, since these patients require endovascular recanalisation (thrombectomy) in accordance with guidelines.*

**Review procedures in accident and emergency - Defined guide values: door-to-needle (thrombolysis) <60, target <30min, door-to-groin-puncture (thrombectomy) <90, target <70min.**

- Reasons for limiting treatment not traceable

**Involve a neutral clinical ethics committee - In my opinion, optional and not always practical.**

**Document the presumed patient's wishes - Cannot always be reliably determined due to the underlying neurological disease. It is strongly recommended to ask and document whether the patient has a living will and to document the patient's wishes as determined in discussions with next of kin. A separate document that defines the treatment limits, the justification for these limits and the persons involved is also recommended.**

**Make a note of the health and welfare power of attorney and include a copy in the patient record, if available - Definitely recommended**

**Train staff in talking to next of kin and the relevant legal background - Difficult and hard to keep up. Recommended in general. It is most important for the senior physicians to have this competence.**

- Nutrition and swallowing diagnostics

**Conduct SLP swallow exams on all stroke patients before the first oral intake of food - A swallow test is obligatory for stroke patients, also according to the certification criteria. However, initial swallow tests do not have to be performed by speech-language pathology. This would be a problem for patients who are admitted at night. Nevertheless, an SLP examination is always recommended if nurses and/or physicians suspect dysphagia. This can be achieved within 24 hours, since certified stroke units require an SLP examination within the first 24 hours after admission.**

**Develop a nutrition concept for early (enteral) nutrition, provide special food for patients with dysphagia - Absolutely necessary**

**Start enteral nutrition and medication earlier - The German Nutrition Society also recommends enteral nutrition in patients with dysphagia.**

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